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THIS IS UNEVALUATED INFORMATION

SOURCE Zeleznice.HEAVIER FREIGHT LOADS IN YUGOSLAVIA

Jezdimir C. Nikolic

Some engineers at the Zemun locomotive yard, determined to utilize the total hauling power of locomotives, asked all yards to compete in hauling trains loaded more heavily than prescribed by law.

Through this competition, participated in by many engineers and firemen from almost all the locomotive yards in Yugoslavia, and aided by the Transportation Service in making up and dispatching heavy railroad trains, these engineers have succeeded in proving that the hauling capacity of Yugoslav locomotives is much greater than the limit prescribed by law. Recently the prescribed locomotive loads have been exceeded by as much as 350 percent, even on gradients of up to 5 percent.

The author believes that loads, depending on the type and series of locomotive, can be increased by 10 to 30 percent on all lines having less than a 5-percent gradient and on lines with a constant gradient of 5 to 10 percent for a distance of less than 2 kilometers on an open line, if the gradient is not in front of a signal. The loads on other lines can be increased from 3 to 10 percent depending on the terrain and the type of locomotive.

Heavier trains than these can be used only in exceptional cases when the needs of the service so require, and with the engineer's consent. He will be obligated not to prolong the running time or request passage where transportation conditions are unsatisfactory.

The length of the trains will normally depend on the length of station trackage.

The author believes that the estimates, upon which the hauling capacity of locomotives is based, are faulty and that the hauling power of Yugoslav locomotives can be increased. The majority of Yugoslav transportation specialists feel that more benefit can be derived from a locomotive which transports a given quantity of freight in 20 years and is then discarded, than from a locomotive which takes 30 years to transport the same amount.

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Besides the type and speed of the cars, the type of locomotive, etc., factors which are constant, full loading depends on the condition of the locomotive boiler, tubes, firing equipment, etc.; the type of coal; climatic conditions; the skill of personnel in operating the locomotive and cars, firing the boilers, maintaining steam pressure, profiting by the down grades or level stretches to increase speed, etc. Since the engineer knows his locomotive and what he can do with it, every load larger than that prescribed should be assigned only with his consent. The strengthening of the couplings and a sufficient length of track at the station are also necessary for the hauling of heavy trains.

Yugoslav heavy trains and the heavy trains in other countries differ greatly in their length. Furthermore, in the US, the average weight of a freight car is 51 tons; in Yugoslavia, 22 tons.

The overloading competition was very successful due to the proficient operation of a good locomotive using well tended cars and a particular mixture of coal.

Increasing loads by 3 to 30 percent, proposed above, would be attainable in ordinary atmospheric conditions if Yugoslav coal mixtures were good. Yugoslavia cannot increase loads further than this considering its inferior coal, condition of locomotives, and young personnel.

New charts prescribing increased loading within these limits as unconditionally obligatory should be drawn up. The maximum train would be 70 to 75 fully loaded freight cars, which is satisfactory for the track length of the majority of Yugoslav stations on main lines. This limit would also be maintained for trains pulling empty cars.

Each line should have tracks of the same length at all stations. The tracks in many Yugoslav stations must be lengthened to accommodate the maximum number of cars.

Heavier trains, longer than the length of the track at a station, can be made up with more than the load prescribed, but such trains should be considered as exceptional and should be avoided in ordinary circumstances. Heavy and long trains must not be sent in one direction if empty locomotives must be sent with them to take on freight for the return trip. All regulations for informing stations should be applied, and such trains not allowed to make the return trip. Yugoslavia has unwarrantably departed from this safety rule.

Trains heavier than prescribed could be dispatched only with the written consent of the engineer. Thus, the engineer, in consenting to transport such a train, would be obligated not to prolong the trip, to operate the train without help, whether in the station, the open line, or at signals. The engineer receives a bonus for operating heavily loaded trains.

Larger freight loads which require particularly rapid transport, such as livestock, perishable goods, fruit, vegetables, packaged meat, fish, etc., are appearing. The problem has not yet been effectively resolved. While freight trains travel over 80 kilometers per hour in some countries, Yugoslav freight trains thus far have not been able to maintain a speed of 35 kilometers per hour.

Yugoslav trains still maintain high speeds on maximum gradients, thus considerably decreasing locomotive loads, increasing operating costs, and requiring far more train-kilometers for the transport of a given quantity of goods than other countries. The speed on gradients should be decreased to 20 and, in some places, to 15 kilometers to decrease this figure. Only a minimum speed should be maintained on downgrades.

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Heavy, slow trains should be made up for the transport of massive quantities of nonperishable freight on busy lines, and light fast trains for the transport of live and perishable freight on lightly travelled lines, if high speeds are allowed on these lines.

Heavy trains should travel from 20 to 45 kilometers an hour, and light trains from 45 to 80 kilometers an hour. Heavy trains could be loaded up to 1,600 tons, and light trains up to 800 tons.

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